



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/674,363

09/29/2003

Paul S. Diefenbaugh

42P17696

5223

8791

7590

06/22/2006

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

CASCHERA, ANTONIO A

ART UNIT

PAPER NUMBER

2628

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,363

Applicant(s)

DIEFENBAUGH ET AL.

Examiner

Antonio A. Caschera

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19-44, 46-52 and 73-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19, 21-44, 47-52 and 73-78 is/are rejected.
- 7) ☒ Claim(s) 20 and 46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>04/12/06</u> |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on 04/14/06.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-75 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In reference to claims 1, 13, 28 and 40, the phrase, "...compensating for one or more selected from a change in backlight intensity and a change in ambient brightness..." (see claim 1 for example) is not clear and concise. It is unclear to the Office what combination of parameters/conditions is/are being compensated for. For example, what does the "more" condition satisfy? Further distinct claim language is required to fully comprehend the claims however for purpose of prior art rejections, the Office will interpret the above phrase as compensating for either change in backlight intensity or change in ambient brightness.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 5, 9, 11, 13, 14, 16, 17, 19, 24-26, 28, 29, 31, 36, 38 and 73-75 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuda (U.S. Patent 6,847,374 B2).

In reference to claims 1, 13 and 28, Matsuda discloses an image display system, program and method complying with environmental conditions (see column 1, lines 10-11 and 46-52). Matsuda discloses the system comprising a projector for displaying image data and a color conversion section for converting RGB color signals into XYZ color signals (see column 9, lines 6-15). Matsuda discloses compensating for ambient brightness by modifying XYZ converted data based upon a luminance sensor (see column 9, lines 30-45). Matsuda also discloses the color conversion section converting the post corrected XYZ values into R'1G'1B'1 values and storing these values in a 3D look-up table storage section (see column 10, lines 20-23). Matsuda discloses the system to display image data that reflect the visual environment where they are displayed by applying color correction after determining the visual environment (see column 5, lines 34-38). Note, in reference to claim 28, Matsuda also discloses a program embodied on an information storage medium causing a computer to perform the above functions (see column 17, lines 28-30).

In reference to claim 73, Matsuda discloses all of the claim limitations as applied to claim 1 above in addition, Matsuda discloses performing gamma correction in R'G'B' color space

Art Unit: 2628

using the 1D look-up table storage (see column 8, lines 31-37, column 10, lines 32-45 and #404 of Figure 3).

In reference to claims 74 and 75, Matsuda discloses all of the claim limitations as applied to claims 13 and 28 respectively above in addition, Matsuda discloses a color conversion unit coupled to a color control processing unit, which comprises the 1D brightness correction lookup table, and further coupled to a color control processing update unit performing the gamma correction (see column 9, lines 9-12, 30-33, column 10, lines 20-23, 34-36 and #404, 408, 420, 460 of Figure 3).

In reference to claims 2, 14 and 29, Matsuda discloses all of the claim limitations as applied to claims 73-75 respectively in addition, Matsuda explicitly discloses correcting color information (intensity) before performing gamma correction (see column 8, lines 26-30 and #403, 408, 409, 460, 404 of Figure 3).

In reference to claims 4, 16 and 31, Matsuda discloses all of the claim limitations as applied to claims 1, 74 and 28 respectively above in addition, Matsuda discloses the R'G'B color space to be the color space used to display the image on the projector (see Figure 3).

In reference to claims 5 and 32, Matsuda discloses all of the claim limitations as applied to claims 1 and 28 respectively above in addition, Matsuda discloses both color spaces to be in the RGB space (see color input RGB #401 and color after color conversion #408 R'G'B' of Figure 3).

In reference to claims 9 and 36, Matsuda discloses all of the claim limitations as applied to claims 1 and 28 respectively above in addition, Matsuda discloses determining image signal brightness correction information, seen as equivalent to Applicant's image brightness profile,

Art Unit: 2628

generating a color transformation in the XYZ color space based upon the brightness correction and applying the transformation by storing the resultant color data (see column 9, lines 53-58, column 10, lines 17-23 and 32-41).

In reference to claims 11 and 38, Matsuda discloses all of the claim limitations as applied to claims 1 and 28 respectively above in addition, Matsuda discloses determining environment information for color correction, generating a color transformation in the XYZ color space based upon the environment information and applying the transformation by storing the resultant color data (see column 9, lines 34-45, column 10, lines 17-23 and 32-41).

In reference to claim 17, Matsuda discloses all of the claim limitations as applied to claim 13 in addition, Matsuda discloses an output signal processing unit that further modifies color data in the third (R'G'B') color space (see #405 of Figure 3).

In reference to claims 19 and 24, Matsuda discloses all of the claim limitations as applied to claims 17 and 13 respectively in addition, Matsuda discloses performing the above described color conversion and brightness correction techniques using a personal computer (see column 16, lines 28-33) which the Office interprets to inherently comprise of a processor executing instructions.

In reference to claim 25, Matsuda discloses all of the claim limitations as applied to claim 13 in addition, Matsuda discloses utilizing a color lookup table for storing data in the second color space (XYZ) to modify the color data (see column 9, lines 30-33).

In reference to claim 26, Matsuda discloses all of the claim limitations as applied to claim 13 above in addition, Matsuda discloses compensating for ambient brightness by modifying XYZ converted data based upon a luminance sensor (see column 9, lines 30-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 6-8, 15, 21-23, 30, 33-35, 40-44, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda (U.S. Patent 6,847,374 B2).

In reference to claims 3, 15, 30 and 42, Matsuda discloses all of the claim limitations as applied to claims 73-75 and 40 respectively. Although Matsuda explicitly discloses correcting color information (intensity) before performing gamma correction (see column 8, lines 26-30 and #403, 408, 409, 460, 404 of Figure 3), Matsuda does not disclose performing gamma correction before color correction. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the color and gamma correction techniques of Matsuda in a slightly different order to achieve the invention as claimed. Applicant has not disclosed that specifically performing gamma correction before color correction provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the reverse order teachings of Matsuda because the exact order of which gamma and color correction is performed is matter chosen which best suits the application at hand. Further, it seems that Applicant's claims support such reasoning as claims 2 and 3 both claim the correction of gamma and color intensity in opposite orders thereby displaying that both configurations are possible and the

Art Unit: 2628

specific order of processing provides no immediate criticality to the invention at hand.

Therefore, it would have been obvious to one of ordinary skill in this art to modify Matsuda to obtain the invention as specified in claims 3, 15, 30 and 42.

In reference to claims 6-8, 21-23, 33-35 and 47-49, Matsuda discloses all of the claim limitations as applied to claims 1, 13, 28 and 40 respectively. Although Matsuda discloses utilizing the RGB, XYZ and modified R'G'B' color spaces (see above), Matsuda does not explicitly disclose utilizing the specific color space combinations as disclosed in claims 6-8, 21-23, 33-35 and 47-49. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the system of Matsuda to support such specified color spaces thereby providing wider compatibility across multiple devices. Applicant has not disclosed that specifically utilizing RGB and HSI for first and second (after conversion) color spaces, for example, provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the above teachings of Matsuda because the exact combination of color spaces utilized are chosen as matter of preference and to which best suit the application at hand. Further, the Office sees no immediate criticality in regards to which specific combination of color spaces is employed. Therefore, it would have been obvious to one of ordinary skill in this art to modify Matsuda to obtain the invention as specified in claims 6-8, 21-23, 33-35 and 47-49.

In reference to claim 40, Matsuda discloses an image display system, program and method complying with environmental conditions (see column 1, lines 10-11 and 46-52). Matsuda discloses the system comprising a projector for displaying image data and a color

Art Unit: 2628

conversion section for converting RGB color signals into XYZ color signals (see column 9, lines 6-15). Matsuda discloses compensating for ambient brightness by modifying XYZ converted data based upon a luminance sensor (see column 9, lines 30-45). Matsuda also discloses the color conversion section converting the post corrected XYZ values into $R'1G'1B'1$ values and storing these values in a 3D look-up table storage section (see column 10, lines 20-23). Matsuda discloses the system to display image data that reflect the visual environment where they are displayed by applying color correction after determining the visual environment (see column 5, lines 34-38). Matsuda discloses a 3D lookup storage unit storing image color data in RGB color space (see #403 of Figure 3), a color conversion unit coupled to receive data from the storage unit and convert it to XYZ space (see #408 of Figure 3) and a color control processing update section that modifies brightness characteristics of image data based upon ambient display conditions (see column 9, lines 30-33 and #460 of Figure 3). Matsuda also discloses the color conversion unit to further convert the brightness corrected color data into $R'G'B'$ color space (see column 10, lines 20-23) and the color processing update section further performing gamma correction upon the $R'G'B'$ color data (see column 19, lines 34-41). Note, the Office interprets the conversion unit of Matsuda functionally equivalent to the first and second conversion agents of Applicant's claim. Further, the Office believes Matsuda to inherently disclose at least one bus coupling the above mentioned units as represented by the data pathways (arrows) of Figure 3 of Matsuda. Matsuda also discloses a colored light sensor coupled with the 3D lookup table, via several other units, detecting the visual environment around the display (see column 9, lines 34-36 and #417 of Figure 3). Although Matsuda does disclose the use of lookup table storage units and further discloses utilizing RAM as a possible storage means (see column 14, lines 27-46),

Art Unit: 2628

Matsuda does not explicitly disclose utilizing dynamic random access memory. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the teachings of Matsuda in order to implement a DRAM type storage unit instead of a RAM type. Applicant has not disclosed that specifically implementing a DRAM type storage unit provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with RAM type lookup tables of Matsuda because the exact type of storage memory unit utilized is a matter chosen to which best suits the application at hand. Further, the specific use of either a RAM or DRAM type memory, in this application, is seen as providing no immediate criticality to the application at hand. Therefore, it would have been obvious to one of ordinary skill in this art to modify Matsuda to obtain the invention as specified in claim 40.

In reference to claim 41, Matsuda discloses all of the claim limitations as applied to claim 40 in addition, Matsuda explicitly discloses correcting color information (intensity) before performing gamma correction (see column 8, lines 26-30 and #403, 408, 409, 460, 404 of Figure 3).

In reference to claim 43, Matsuda discloses all of the claim limitations as applied to claim 40 above in addition, Matsuda discloses the R'G'B color space to be the color space used to display the image on the projector (see Figure 3).

In reference to claim 44, Matsuda discloses all of the claim limitations as applied to claim 40 in addition, Matsuda discloses an output signal processing unit that further modifies color data in the third (R'G'B') color space (see #405 of Figure 3).

In reference to claim 50, Matsuda discloses all of the claim limitations as applied to claim 40 in addition, Matsuda discloses performing the above described color conversion and brightness correction techniques using a personal computer (see column 16, lines 28-33) which the Office interprets to inherently comprise of a processor executing instructions.

In reference to claim 51, Matsuda discloses all of the claim limitations as applied to claim 40 in addition, Matsuda discloses utilizing a color lookup table for storing data in the second color space (XYZ) to modify the color data (see column 9, lines 30-33).

5. Claims 10, 12, 27, 37, 39, 52 and 76-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda (U.S. Patent 6,847,374 B2) in view of Rossi (U.S. Patent 7,042,436).

In reference to claims 10 and 37, Matsuda discloses all of the claim limitations as applied to claims 9 and 36 respectively above. Although Matsuda discloses modifying image color data based upon image brightness information (see column 9, lines 53-58, column 10, lines 17-23 and 32-41), Matsuda does not explicitly disclose modifying a backlight intensity based upon such information. Rossi discloses a method for optimizing power in a computer which utilizes an LCD so that the intensity of a backlight is shifted from high to medium when switched to “battery power” mode and detected by an ambient light sensor (see column 1, lines 8-11 and column 3, lines 1-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the display power conservation techniques of Rossi with the color correction techniques of Matsuda in order to maximize load efficiency during “battery mode” thereby gaining the most amount of power consumption from a display of a computer, cell phone or digital television (see column 2, lines 10-19 of Rossi).

In reference to claims 12 and 39, Matsuda discloses all of the claim limitations as applied to claims 11 and 38 respectively. Matsuda does not explicitly disclose modifying a backlight intensity based on the ambient light level however Rossi does. Rossi discloses a method for optimizing power in a computer which utilizes an LCD so that the intensity of a backlight is shifted from high to medium when switched to “battery power” mode and detected by an ambient light sensor (see column 1, lines 8-11 and column 3, lines 1-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the display power conservation techniques of Rossi with the color correction techniques of Matsuda in order to maximize load efficiency during “battery mode” thereby gaining the most amount of power consumption from a display of a computer, cell phone or digital television (see column 2, lines 10-19 of Rossi).

In reference to claims 27 and 52, Matsuda discloses all of the claim limitations as applied to claims 13 and 40 respectively. Matsuda does not explicitly disclose controlling a backlight intensity of a display device however Rossi does. Rossi discloses a method for optimizing power in a computer which utilizes an LCD so that the intensity of a backlight is shifted from high to medium when switched to “battery power” mode (see column 1, lines 8-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the display power conservation techniques of Rossi with the color correction techniques of Matsuda in order to maximize load efficiency during “battery mode” thereby gaining the most amount of power consumption from a display of a computer, cell phone or digital television (see column 2, lines 10-19 of Rossi).

In reference to claim 76, Matsuda discloses an image display system, program and method complying with environmental conditions (see column 1, lines 10-11 and 46-52). Matsuda discloses the system comprising a projector for displaying image data and a color conversion section for converting RGB color signals into XYZ color signals (see column 9, lines 6-15). Matsuda discloses compensating for ambient brightness by modifying XYZ converted data based upon a luminance sensor (see column 9, lines 30-45). Matsuda further discloses the projector of LCD type (see column 16, lines 5-15). Matsuda does not explicitly disclose reducing power consumption of a display having a battery by decreasing the display backlight intensity however Rossi does. Rossi discloses a method for optimizing power in a computer which utilizes an LCD so that the intensity of a backlight is shifted from high to medium when switched to "battery power" mode (see column 1, lines 8-11 and column 3, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the display power conservation techniques of Rossi with the color correction techniques of Matsuda in order to maximize load efficiency during "battery mode" thereby gaining the most amount of power consumption from a display of a computer, cell phone or digital television (see column 2, lines 10-19 of Rossi).

In reference to claim 77, Matsuda and Rossi disclose all of the claim limitations as applied to claim 76 above in addition, Matsuda also discloses the color conversion unit to further convert the brightness corrected color data (XYZ) into R'G'B' color space (see column 10, lines 20-23) and the color processing update section further performing gamma correction upon the R'G'B' color data (see column 19, lines 34-41).

In reference to claim 78, Matsuda and Rossi disclose all of the claim limitations as applied to claim 76 above in addition, both Matsuda and Rossi disclose utilizing ambient light to compensating for color brightness of a display (see above rejection for Matsuda passage and column 3, lines 7-15 of Rossi).

Allowable Subject Matter

6. Claims 20 and 46 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

In reference to claims 20 and 46, the prior art of record does not explicitly disclose the color control agent using a color lookup table storing data in the first color space to further modify the color data in combination with the further limitations of claims 17 and 44, from which claims 20 and 46 depend upon.

Response to Arguments

7. The cancellation of claims 18 and 45 and the addition of claims 73-78 are noted.

8. Applicant's arguments, see attached Interview Summary conducted on 04/12/06, with respect to the 35 USC 112, 1st paragraph rejection of the claims have been fully considered and are persuasive. The 35 USC 112, 1st paragraph rejection of the claims has been withdrawn.

9. Applicant's arguments, see pages 12-15 of Applicant's Remarks, filed 04/14/06, with respect to the rejection(s) of claim(s) 1-52 under 35 USC 103(a) (Hino, Wicker and Jack) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

Art Unit: 2628

However, upon further consideration, a new ground(s) of rejection is made in view of Matsuda and Rossi.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung, can be reached at (571) 272-7794.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:


571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

aac

6/19/06

PATENT EXAMINER


Kee M. Tung
Primary Examiner